FIG.1

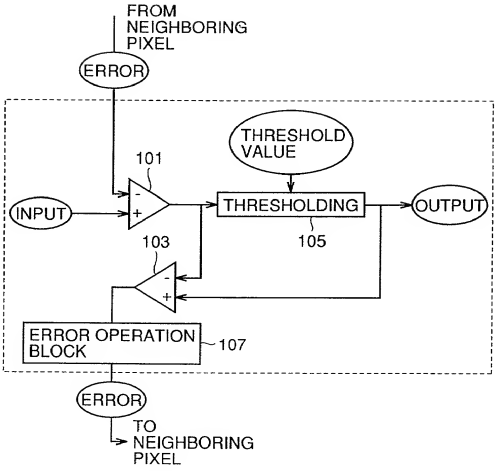


FIG.2

			X	3	2	1
1	2	3	3	3	2	1
1	2	2	2	2	2	1
1	1	1	1	1	1	1

FIG.3

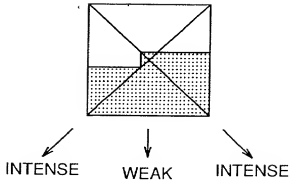


FIG.4

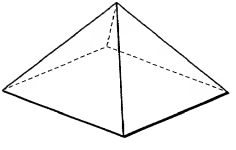


FIG. 5

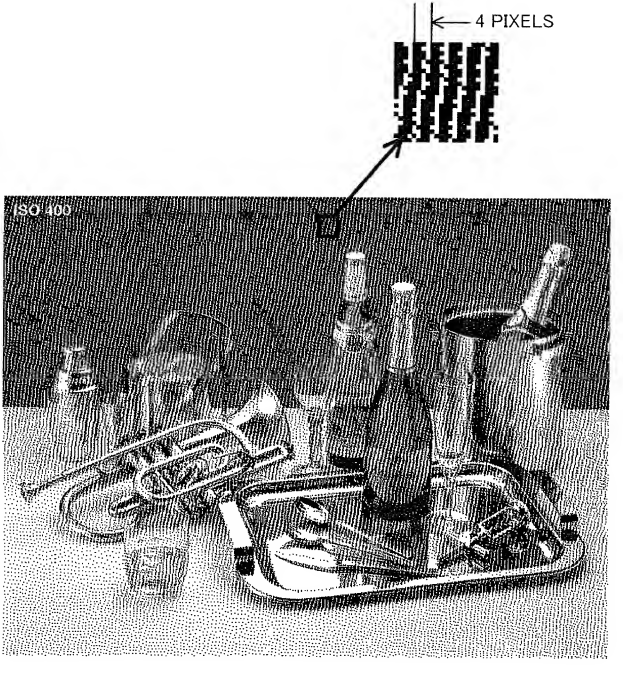


FIG.6

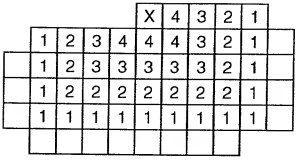


FIG. 7

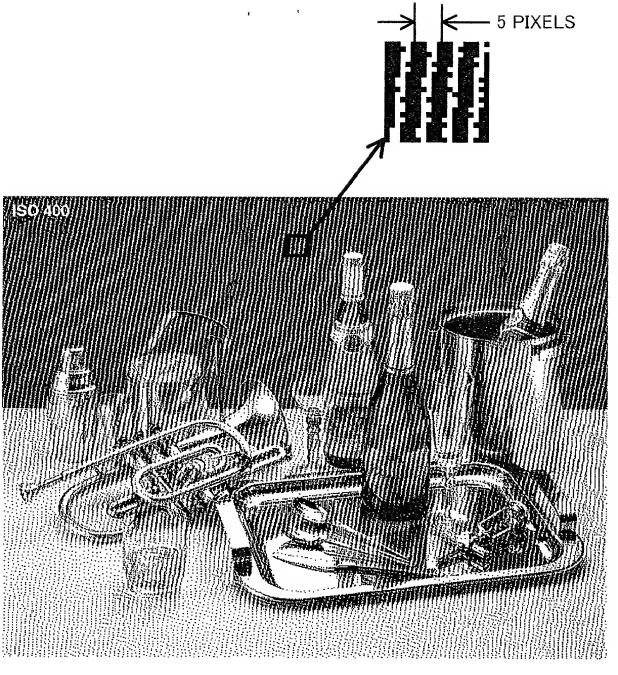


FIG.8

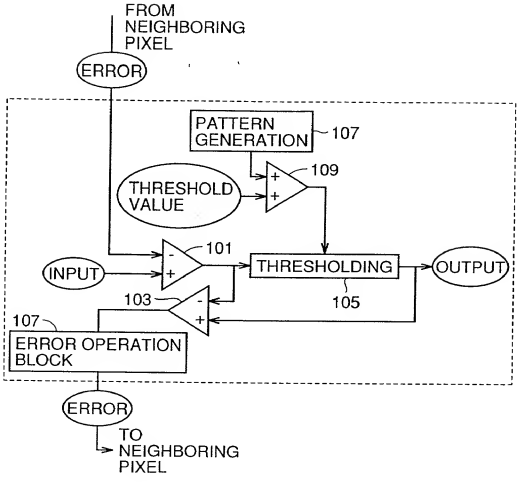

FROM NEIGHBORING PIXEL
ERROR
PATTERN GENERATION
107
109
THRESHOLD VALUE
101
INPUT
THRESHOLDING
OUTPUT
103
105
107
ERROR OPERATION BLOCK
ERROR
TO NEIGHBORING PIXEL

FIG.9

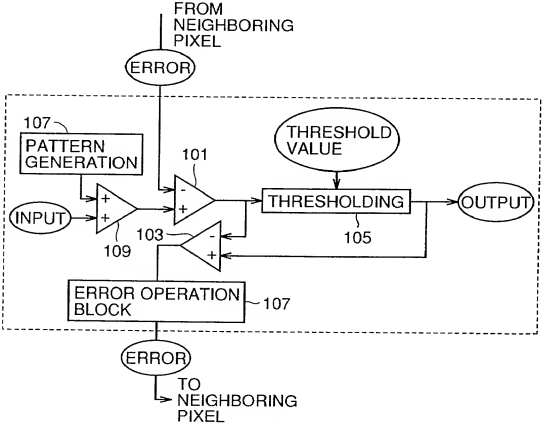
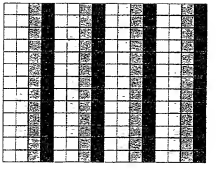

FROM NEIGHBORING PIXEL
ERROR
107
PATTERN GENERATION
THRESHOLD VALUE
101
INPUT
109
THRESHOLDING
OUTPUT
103
105
ERROR OPERATION BLOCK
107
ERROR
TO NEIGHBORING PIXEL

FIG. 10



PATTERN SIGNAL
= P (i%4 − 1.5) / 4
P: MAGNITUDE OF SIGNAL
i: PIXEL NUMBER
i%4: REMAINDER OF i DIVIDED BY 4

ITH PIXEL

P = 0.1 (INPUT = 0 TO 1)

FIG. 11

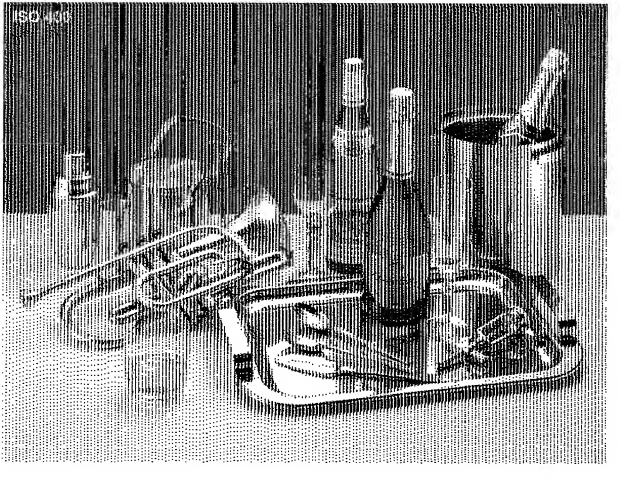


FIG. 12

FIG. 13

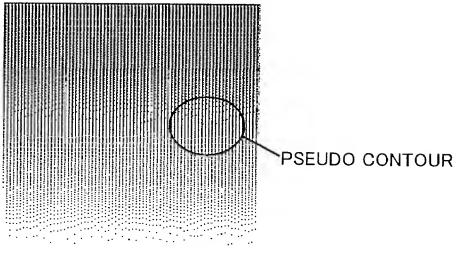
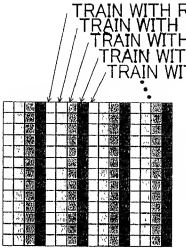


FIG. 14



PATTERN SIGNAL APPLIED TO THRESHOLD VALUE

= P (i%4 − 1.5) / 4

P: MAGNITUDE OF SIGNAL

i: PIXEL NUMBER

i%4: REMAINDER OF i DIVIDED BY 4

(P IS APPROXIMATELY 0.1)

FIG.15

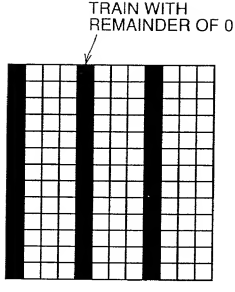


FIG.16

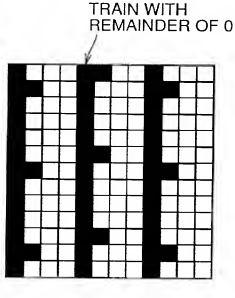


FIG.17

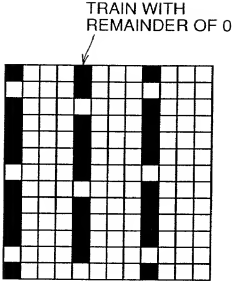


FIG. 18

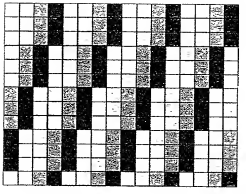


FIG. 19

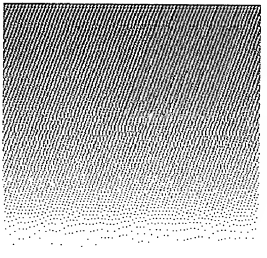


FIG. 20

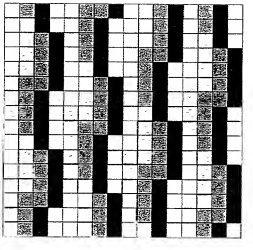


FIG.21

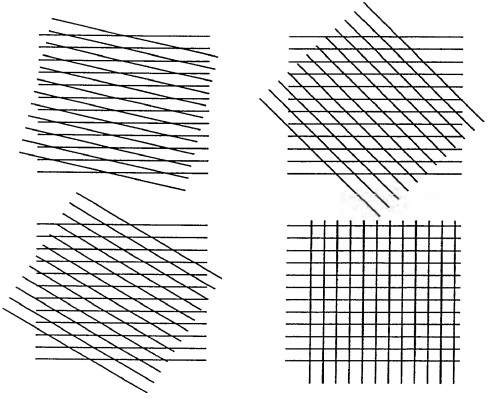


FIG.22

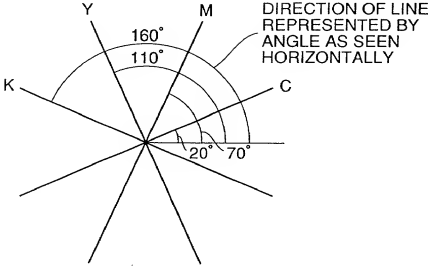
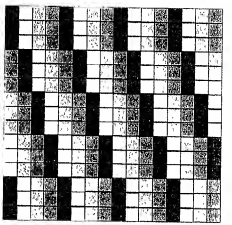

Y
M
160°
110°
DIRECTION OF LINE REPRESENTED BY ANGLE AS SEEN HORIZONTALLY
K
C
20°
70°

FIG. 23



LINE PATTERN SIGNAL APPLIED TO THRESHOLD VALUE
= P × ((− i / 3 + j)%4 − 1.5) / 3
i, j: PIXEL OF ITH ROW AND JTH COLUMN
P: MAGNITUDE (OF 0.1 HEREIN)
%4: REMAINDER OF DIVISION BY 4

FIG. 24

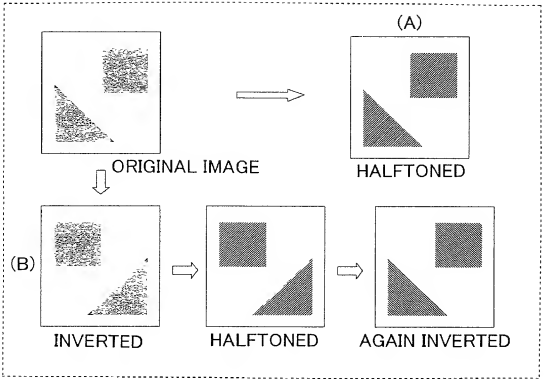

(A)
ORIGINAL IMAGE
HALFTONED
(B)
INVERTED
HALFTONED
AGAIN INVERTED

FIG.25

					X	4	3	2	1		
		1	2	3	4	3	2	1			
			1	2	3	2	1				
				1	2	1					
					1						

FIG.26

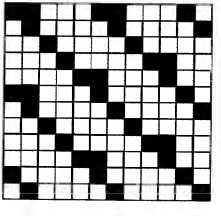
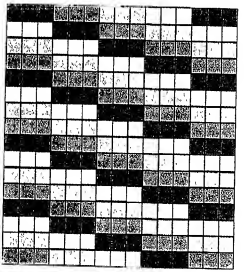


FIG. 27



LINE PATTERN SIGNAL APPLIED TO THRESHOLD VALUE
= P × ((i − j / 3)%4 − 1.5) / 3
i, j: PIXEL OF ITH ROW AND JTH COLUMN
P: MAGNITUDE (OF 0.15 HEREIN)
%4: REMAINDER OF DIVISION BY 4

FIG.28

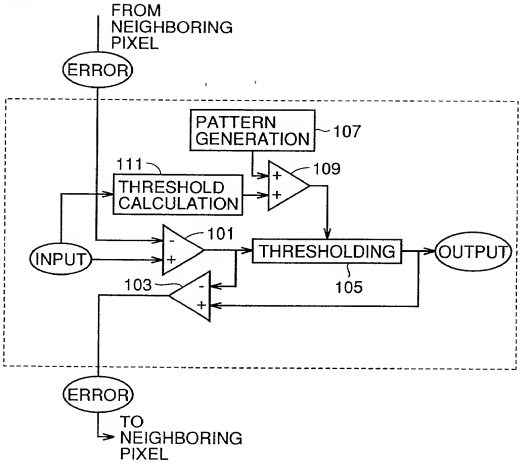

FROM
NEIGHBORING
PIXEL
ERROR
PATTERN
GENERATION
107
111
THRESHOLD
CALCULATION
109
101
INPUT
THRESHOLDING
OUTPUT
105
103
ERROR
TO
NEIGHBORING
PIXEL

FIG.29

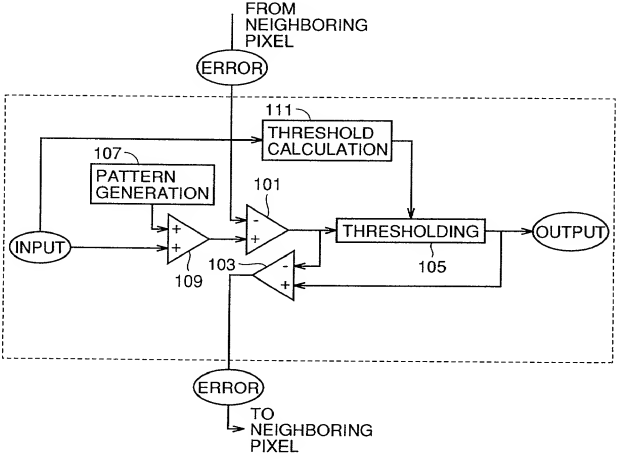
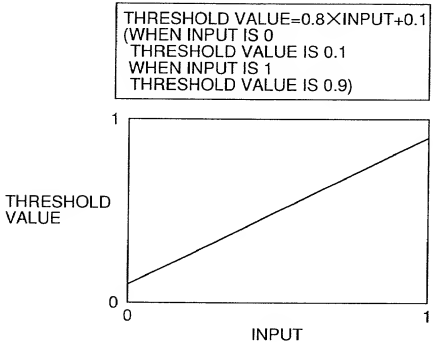

FROM
NEIGHBORING
PIXEL
ERROR
111
THRESHOLD
CALCULATION
107
PATTERN
GENERATION
101
INPUT
THRESHOLDING
OUTPUT
109
103
105
ERROR
TO
NEIGHBORING
PIXEL

FIG.30


THRESHOLD VALUE=0.8×INPUT+0.1
(WHEN INPUT IS 0
THRESHOLD VALUE IS 0.1
WHEN INPUT IS 1
THRESHOLD VALUE IS 0.9)
1
THRESHOLD VALUE
0
0
1
INPUT